

**Phosphorescent polyelectrolyte aggregate used e.g. for the labelling and detection of biomolecules, e.g. toxins or hormones, comprises a luminescent metal-ligand complex in a screening sheath of polyelectrolyte**

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**Abstract of DE10025145**

Phosphorescent polyelectrolyte aggregates in which a luminescent metal-ligand complex is enveloped by polyelectrolyte molecules, thus screening the excited state of the complex and suppressing the luminescence-quenching effect of sample components. Phosphorescent polyelectrolyte aggregates (I) in which one or more molecules of a luminescent metal-ligand complex are enveloped by one or more molecules of a polyelectrolyte. These aggregates show luminescence decay times of 100 nsec to 10 msec. When dissolved in aqueous samples the excited state of the complex is screened by the polyelectrolyte sheath so that the quenching of luminescence by constituents of the sample is eliminated or at least reduced and luminescence properties such as quantum yield, spectral properties, luminescence decay time and degree of polarization are substantially unaffected by the sample composition. Independent claims are also included for the following: (1) a method for the production of (I) by mixing an aqueous polyelectrolyte solution and a metal-ligand complex solution; and (2) phosphorescent aggregates as above in which luminescence quenching by many components of the sample is eliminated or reduced but quenching by molecular oxygen is at least partly retained.

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